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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/507,514 | 02/18/2000 | Richard L. Davis | 11-1045 | 7920 |

7590 08/27/2003

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EXAMINER

BELLO, AGUSTIN

ART UNIT

PAPER NUMBER

2633

DATE MAILED: 08/27/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/507,514

Applicant(s)

DAVIS, RICHARD L. *RL*

Examiner

Agustin Bello

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-8 and 10-14 is/are rejected.
- 7) ☒ Claim(s) 5, 9 and 15 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hutchinson (U.S. Patent 5,751,830) in view of Startup (U.S. Patent 6,137,612).

Regarding claims 1, 7, and 11, Hutchinson teaches an optical channelizer system for dividing up a relatively wide bandwidth optical signal into a plurality of subchannels, the optical channelizer system comprising: an optical local oscillator (LO) (reference numeral 14 in Figure 2) for providing a comb of LO optical frequencies, an optical splitter (reference numeral 60 in Figure 2) for spatially dividing said comb of LO optical frequencies into a plurality of LO signals (column 6 lines 10-15); a device (reference numeral 18 in Figure 2) for providing the optical signal, an optical channelizer (reference numeral 16 in Figure 2) for receiving said optical signals and said plurality of LO signals; and a photo detector array (reference numeral 20 in Figure 2) disposed adjacent said optical channelizer for receiving the images of said optical signals and said LO signals. Hutchinson differs from the claimed invention in that Hutchinson fails to specifically teach that the device providing the optical signal provides a plurality of replicated versions of the optical signal, with each version being translated by a predetermined frequency. Startup, in the same field of endeavor, teaches it is well known in the art to provide a plurality of replicated versions of the optical signals, with each version being translated by a predetermined

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frequency (column 3 lines 21-49). One skilled in the art would have been motivated to provide a plurality of replicated versions of the optical signals, with each version being translated by a predetermined frequency in order to simplify the conversion of the optical signal via the detector array. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have provided a plurality of replicated versions of the optical signals, with each version being translated by a predetermined frequency.

Regarding claims 2, 3, and 12, the combination of Hutchinson and Startup differs from the claimed invention in that it fails to specifically teach that the optical channelizer system is based upon a diffraction grating or an integrated optical array wave guide grating. However, the use of diffraction gratings and integrated optical array wave-guide gratings is well known in the art. One skilled in the art would have been motivated to have used diffraction gratings or integrated optical array wave guide gratings in order to provide the intermixed radiation of the LO signal and the optical signal to specific photodiodes. Furthermore, Hutchinson suggests the use of an optical channelizer based upon a diffraction grating in that the LO signal and the optical signal are diffracted at a particular angle towards the photodetector array in the system. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have based the optical channelizer system upon a diffraction grating or an integrated optical array wave guide grating.

Regarding claims 4, 8, and 14 the combination of Hutchinson and Startup differs from the claimed invention in that it fails to specifically teach an optical amplifier for amplifying said LO optical signals or the optical signals. However, amplification of optical signals is very well known in the art. One skilled in the art would have been motivated to have amplified the LO

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signals or the optical signals in the system of the combination of Hutchinson and Startup in order to provide a clear LO or optical signals for the mixing of signals in the system. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have included an optical amplifier for amplifying said LO optical signals or optical signals.

Regarding claim 5, 9, and 15, the combination of Hutchinson and Startup differs from the claimed invention in that it fails to specifically teach an optical splitter and optical amplifier which are formed from a monolithic optical splitter/amplifier integrated circuit. However, integration of independent parts is very well known in the art. One skilled in the art would have been motivated to have integrated the optical splitter and optical amplifier to form a monolithic optical splitter/amplifier integrated circuit in order to reduce the overall cost, size, and complexity of the system. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have integrated the optical splitter and optical amplifier to form a monolithic optical splitter/amplifier integrated circuit.

Regarding claims 6, 10, and 13 the combination of Hutchinson and Startup differs from the claimed invention in that it fails to specifically teach that said device for providing a plurality of replicated optical signals or LO signals is a Bragg cell. However, it is well known in the art that Bragg cells have the ability to provide a plurality of optical signals. For example, Alexander, in the same field of endeavor, teaches it is well known in the art to use a Bragg cell for providing a plurality replicated optical signals (Figure 4). One skilled in the art would have been motivated have used a Bragg cell to provide a plurality of replicated optical signals or LO signals since Bragg cells are readily available and inexpensive. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have used Bragg cells to

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provide a plurality of replicated optical signals in the system of the combination of Hutchinson and Startup.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Davis, Zehl, Langdon, Spezio, Alexander, Wickham, Brosnan, Meyzonnetie, and Shimonaka.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (703)308-1393. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (703)305-4729. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9314 for regular communications and (703)872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

AB

August 21, 2003


JASON CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600